

What Is Claimed Is:

1. A control circuit of a liquid crystal display device, comprising:

5 a display driving data generation section for generating display driving data corresponding to a combination of image data of a current frame and post driving status data of a previous frame, wherein

10 said display driving data generation section further comprises:

a conversion table for storing compensation data or compensation display driving data corresponding to a combination of significant bits of the image data of the current frame and of the post driving status data of the previous frame; and

15 an interpolation operation section for generating interpolation compensation data or interpolation compensation display driving data by performing an interpolation operation for the compensation data or the compensation display driving data which is read from said conversion table according to insignificant bits of said image data of the current frame and of the post driving status data of the previous frame,

20 said conversion table including a singular point conversion table used when the post driving status data of the previous frame is a first data, and an ordinary point conversion table used when the post driving status data of

the previous frame is other than said first data, and

said display driving data generation section selecting  
either said singular point conversion table or said ordinary  
point conversion table depending on whether the post driving  
5 status data of the previous frame is the first data.

2. The control circuit of a liquid crystal display  
device according to Claim 1, further comprising a frame  
memory for storing said post driving status data, wherein a  
10 flag for indicating whether said post driving status data is  
the first data or not is stored in said frame memory, and  
said singular point conversion table or said ordinary point  
conversion table is selected according to said flag.

15 3. The control circuit of a liquid crystal display  
device according to Claim 1, wherein  
two adjacent compensation data or compensation display  
driving data corresponding to the significant bits of the  
image data of said current frame are read from said singular  
20 point conversion table, and the interpolation operation is  
performed for the read two data according to the  
insignificant bits of said image data of the current frame;  
and

four adjacent compensation data or compensation display  
25 driving data corresponding to the significant bits of said  
post driving status data of the previous frame and of the  
image data of the current frame respectively are read from

said ordinary point conversion table, and the interpolation operation is performed for the read four data according to the insignificant bits of said post driving status data of the previous frame and of the image data of the current frame.

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4. A control circuit of a liquid crystal display device, comprising:

a display driving data generation section for generating display driving data corresponding to a combination of image data of a current frame and post driving status data of a previous frame, wherein

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said display driving data generation section further comprises:

a conversion table for storing compensation data or compensation display driving data corresponding to a combination of the significant bits of the image data of the current frame and of the post driving status data of the previous frame; and

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an interpolation operation section for generating interpolation compensation data or interpolation compensation display driving data by performing an interpolation operation for compensation data or compensation display driving data which is read from said conversion table according to insignificant bits of said image data of the current frame and of said post driving status data of the previous frame,

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said interpolation operation section including a singular point interpolation operation unit used when the

post driving status data of the previous frame is a first data and an ordinary point interpolation operation unit used when the post driving status data of the previous frame is other than said first data, and

5                   said display driving data generation section selecting either said singular point interpolation operation unit or said ordinary point interpolation operation unit depending on whether the post driving status data of the previous frame is the first data or not.

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5.     The control circuit of a liquid crystal display device according to Claim 4, further comprising a frame memory for storing said post driving status data, wherein a flag for indicating whether said post driving status data is the first data or not is stored in said frame memory, and  
15     said singular point interpolation operation unit or said ordinary point interpolation operation unit is selected according to said flag.

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6.     The control circuit of a liquid crystal display device according to Claim 4, wherein said singular point interpolation operation unit performs a non-linear interpolation operation for said post driving status data of the previous frame, and said ordinary point interpolation  
25     operation unit performs a linear interpolation operation for said post driving status data of the previous frame.

7. The control circuit of a liquid crystal display device according to Claim 4, wherein said conversion table further includes a singular point conversion table used when the post driving status data of the previous frame is a  
5 second data, and an ordinary point conversion table used when the post driving status data of the previous frame is other than said second data, and said display driving data generation section selects either said singular point conversion table or said ordinary point conversion table  
10 according to whether the post driving status data of the previous frame is the second data or not.

8. A control circuit of a liquid crystal display device, comprising:  
15 a display driving data generation section for generating display driving data corresponding to a combination of image data of a current frame and post driving status data of a previous frame, wherein  
said display driving data generation section further  
20 comprises:  
a conversion table for storing compensation data or compensation display driving data corresponding to a combination of the image data of the current frame and the post driving status data of the previous frame, said  
25 conversion table including a first conversion table corresponding to a first frame frequency and a second conversion table corresponding to a second frame frequency;

and

an interpolation operation section for performing an interpolation operation which includes an extrapolation operation for compensation data or compensation display driving data which is read from said first or second conversion table according to the current frame frequency, to generate interpolation compensation data or interpolation compensation display driving data.

9. The control circuit of a liquid crystal display device according to Claim 8, further comprising a frame frequency detection section for detecting a current frame frequency.

10. A liquid crystal display device comprising:  
a liquid crystal display panel; and  
a control circuit of the liquid crystal panel, including a display driving data generation section for generating display driving data corresponding to a combination of image data of a current frame and post driving status data of a previous frame, wherein

said display driving data generation section further comprises:

a conversion table for storing compensation data or compensation display driving data corresponding to a combination of significant bits of the image data of the current frame and of the post driving status data of the

previous frame; and

an interpolation operation section for generating interpolation compensation data or interpolation compensation display driving data by performing an interpolation operation for the compensation data or the compensation display driving data which is read from said conversion table according to insignificant bits of said image data of the current frame and of the post driving status data of the previous frame,

said conversion table including a singular point conversion table used when the post driving status data of the previous frame is a first data, and an ordinary point conversion table used when the post driving status data of the previous frame is other than said first data, and

said display driving data generation section selecting either said singular point conversion table or said ordinary point conversion table depending on whether the post driving status data of the previous frame is the first data.

11. A liquid crystal display device comprising:

a liquid crystal display panel; and

a control circuit of the liquid crystal panel, including a display driving data generation section for generating display driving data corresponding to a combination of image data of a current frame and post driving status data of a previous frame, wherein

said display driving data generation section further

comprises:

5       a conversion table for storing compensation data or compensation display driving data corresponding to a combination of the significant bits of the image data of the current frame and of the post driving status data of the previous frame; and

10       an interpolation operation section for generating interpolation compensation data or interpolation compensation display driving data by performing an interpolation operation for compensation data or compensation display driving data which is read from said conversion table according to insignificant bits of said image data of the current frame and of said post driving status data of the previous frame,

15       said interpolation operation section including a singular point interpolation operation unit used when the post driving status data of the previous frame is a first data and an ordinary point interpolation operation unit used when the post driving status data of the previous frame is other than said first data, and

20       said display driving data generation section selecting either said singular point interpolation operation unit or said ordinary point interpolation operation unit depending on whether the post driving status data of the previous frame is the first data or not.

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12. A liquid crystal display device comprising:  
a liquid crystal display panel; and



a control circuit of the liquid crystal panel, including  
a display driving data generation section for generating  
display driving data corresponding to a combination of image  
data of a current frame and post driving status data of a  
5 previous frame, wherein

said display driving data generation section further  
comprises:

a conversion table for storing compensation data or  
compensation display driving data corresponding to a  
10 combination of the image data of the current frame and the  
post driving status data of the previous frame, said  
conversion table including a first conversion table  
corresponding to a first frame frequency and a second  
conversion table corresponding to a second frame frequency;  
15 and

an interpolation operation section for performing an  
interpolation operation which includes an extrapolation  
operation for compensation data or compensation display  
driving data which is read from said first or second  
20 conversion table according to the current frame frequency, to  
generate interpolation compensation data or interpolation  
compensation display driving data.